



**NATIONAL NUCLEAR SECURITY ADMINISTRATION**

**Fiscal Year 2008**

**PERFORMANCE EVALUATION REPORT**

**OF**

**SANDIA CORPORATION**

**For the Management and Operation of**

**SANDIA NATIONAL LABORATORIES  
Contract No. DE-AC04-94-AL85000**

**December 2, 2008**

## PERFORMANCE OBJECTIVE 3 – DEFENSE PROGRAMS

**Defense Programs Directed Stockpile Work (DSW) and Readiness Activities:**  
Conduct design and development, maintain the existing stockpile while supporting stockpile transformation, and develop modern production capabilities and capacity for LEPs and future stockpile requirements.

**Adjectival Rating**  
**OUTSTANDING**

### Summary of Performance

FY 2008 has been extremely challenging, and Sandia staff has demonstrated good leadership in handling emerging technical issues with the W76-1. The Sandia team acted quickly and with a sense of urgency to coordinate with other organizations in resolving issues in a timely manner so that the W76-1 LEP FPU can be achieved.

In FY 2008, Sandia has provided outstanding support for the B61 and B83 weapon systems ensuring critical needs are addressed. Especially impressive was Sandia's level of professionalism and the stewardship for the B61 and B83 program provided by the weapon system groups. There are several examples where Sandia exceeded NNSA expectations. These include the outstanding work supporting the Alt 357 LEP, Alt 356/8/9 Spin Rocket Motor (SRM) retrofits, 9977 project, CMS implementation, efforts to resolve B83 flight test concerns with the AFTU study, and development of DJTA-1B. With regards to the DJTA effort, the Sandia led team faced unique challenges that had to be overcome as well as a compressed time scale. Nevertheless, this "last-of-its-kind" surveillance flight test unit was successfully delivered and flight tested at the Tonopah Test Range (TTR) and all of the unique data was retrieved, post-test, in the field.

Activities for this performance objective included completing the Level II Milestones associated with the engineering support for the enduring stockpile. The scope of these Level II Milestones included the W76 LEP; development and production of weapon components that require replacement due to aging through alterations (ALTs) and limited life component exchanges (LLCEs); activities that strengthen the technical basis for the stockpile, including surveillance tests and component and material evaluations, significant finding investigations (SFIs), reliability assessments, nuclear explosive safety analyses and annual assessment; engineering support required for weapon operations at Pantex, including nuclear explosive safety studies, issue resolution and engineering drawing configuration management; and finally, support for the Nuclear Weapon Complex infrastructure, including engineering release systems, databases and communication systems. Sandia successfully completed or exceeded commitments to the Enduring Stockpile and scored Blue 73 Level II Milestones under this performance objective, while continuing support for the production agencies and making significant improvements to the stockpile's technical basis. In the NNSA final assessment, Sandia rated Good in Performance Targets 3.1.1 and 3.5.1 and Outstanding in Performance Targets 3.2.1, 3.3.1, 3.3.2, 3.4.2, 3.4.2 and 3.6.1.

## Significant Accomplishments

Delivering the W76-1 LEP in September 2008 is the highest priority on the list of actions established by the Deputy Administrator for Defense Programs. This milestone represents the most significant product delivery made by the Nuclear Weapon Complex in over a decade, made all the more significant by the fact that Los Alamos National Laboratory was able to certify the warhead without an underground test. This accomplishment demonstrates that the Stockpile Stewardship Program is working. The W76-1 team, as a whole, could not **Get the Job Done**, without Sandia meeting its commitments. There have been many accomplishments, and Sandia's W76-1 team should be proud for this one in particular, and the team is to be commended for its service, and contribution to NNSA's mission of stewarding the Nation's stockpile.

- 

(b)(2)High

Sandia provided engineering expertise to help overcome several technical obstacles that threatened to delay the W76-1/Mk4A FPU in FY 2008. Sandia successfully completed this work on time and within cost with no resulting redesign required to the W76-1/Mk4A.

- Sandia successfully completed the Combined Environment (CE-3) shock and vibration test series for the B61 ALT 357 required to remove DoD DRAAG concerns about the completeness of the qualification technical basis of the B61 ALT 357. Sandia provided ongoing B61 ALT 357 and ALTs 356/358/359 production support for Pantex in addition to performing the DRAAG required ALT 357 CE-3 test and resolving ALT 356/358/359 SRM component production issues.
- Sandia completed all Level II Milestones associated with Readiness and re-organized its technology maturation activities around Sandia's five Core Products. Sandia accomplished significant progress in technology maturation in each of these Core Product areas, including both system architecture accomplishments as well as subsystem and component maturation accomplishments. These accomplishments are on track to support a potential B61 refurbishment.
- The Neutron Generator (NG) Enterprise continued to deliver on all production and development commitments, completing all Level II Milestones and improving processes including: reduction of neutron generator span time from 171 days to 114 days, 56 percent reduction in errors detected at Quality Assurance Inspection Procedures (QAIP), and 100 percent first time acceptance by NNSA. The NG Enterprise took on 3 new mission assignments while decreasing the costs by 6 percent. The NG Enterprise received the first Shingo Prize awarded to a public sector organization for using lean/world-class manufacturing practices to attain world-class operational status. NNSA also recognized the NG Enterprise during the HS-64 Assessment as "best in the complex" for implementation of "state of the art" work control and waste management processes.
- Sandia completed the second year of the Surveillance Transformation Program continuing to expand WETL testing to explore the worst-case Stockpile-to-Target Sequence (STS) requirements through mechanical preconditioning and tests conducted under extreme STS temperatures and electrical signal inputs. Sandia contributed to the completion of scheduled Stockpile Flight Tests (SFT) and conducted Stockpile Lab Tests (SLT) and